

**Decision Rationale
Total Maximum Daily Load
Polychlorinated Biphenyls (PCBs)
Levittown Lake
Falls Township and Tullytown Borough
Bucks County
Pennsylvania**

I. Introduction

This document sets forth the Environmental Protection Agency's (EPA) rationale for approving the Total Maximum Daily Load (TMDL) of for Levittown Lake submitted by the Pennsylvania Department of Environmental Protection (PADEP) by letter dated March 9, 2001, and received by EPA on March 9, 2001. Our rationale is based on information provided¹ in the document and Appendices. We review the TMDL against following eight regulatory conditions as set forth in 40 CFR §130:

- 1) The TMDLs are designed to implement applicable water quality standards.
- 2) The TMDLs include a total allowable load as well as individual waste load allocations and load allocations.
- 3) The TMDLs consider the impacts of background pollutant contributions.
- 4) The TMDLs consider critical environmental conditions.
- 5) The TMDLs consider seasonal environmental variations.
- 6) The TMDLs includes a margin of safety.
- 7) There is reasonable assurance that the TMDLs can be met.
- 8) The TMDLs has been subject to public participation.

II. Background

Levittown Lake was included on the 1996 CWA Section 303(d) list in State Water Plan Watershed 2-D. In 1998, the lake was included on the revised list in State Watershed Plan 2-E also as impaired by chlordane. These listings erroneously indicate the cause of impairment as chlordane. Fish tissue data collected by Pennsylvania Department of Environmental Protection (PADEP), and discussed in further detail below, clearly determined that the cause of impairment to Levittown Lake is PCB contamination.

¹ EPA considers supporting information that may be included in the submittal but not the TMDL document in determining our approval.

Levittown Lake has a surface area of approximately 22 acres, and was created in the 1950's by the flooding of a sand/gravel quarry. It has no natural inlets, being fed solely by groundwater, and is at equilibrium with the water table. Several storm sewers discharge into the lake from the surrounding residential neighborhood. They drain an area approximately $\frac{3}{4}$ of a square mile. The only outlets are by evapotranspiration and infiltration to the ground water. According to a 1956 engineering survey, the mean depth of the lake is 10 feet and its maximum depth is 18 feet. There are no surface water inflows, so siltation of the lake should occur at a slower rate than with other artificial lakes. Even after more than 40 years, these depths may still be fairly accurate. The Pennsylvania Fish and Boat Commission (PFBC) currently stocks the lake with Rainbow and Palomino Trout. Also found in the lake are Channel Catfish, White perch, Yellow Perch, Pumpkinseed, Bluegill, Largemouth Bass, and Black Crappie.

On the adjoining property, only about 200 feet southeast of the lake, is St. Michael's Landfill. This landfill is also an abandoned sand/gravel quarry. The site accepted municipal and industrial waste from approximately 1960 to 1975, when it was closed. A liquid chemical fire occurred at the site in 1968, although the landfill was not licensed to accept liquid industrial waste. A 1982 inspection report noted erosion gullies leading from the landfill to the lake, potentially allowing landfill runoff to enter Levittown Lake.

The PFBC and the PADEP first collected fish tissue samples from Levittown Lake in 1986 because chlordane and PCB were detected in lake sediments the previous year by the EPA. The initial sample of white perch fillets contained concentrations of PCB and chlordane above the US Food and Drug Administration's (FDA) Action Level. PADEP also sampled white perch in 1989, 1994, and 1995. The lake was first added to the 303(d) list in 1996. When PADEP applied the Great Lakes Sport Fish Consumption Advisory Protocol in 1998, chlordane levels were below the Action Level. Average PCB concentration ($0.329^{\text{mg}}/\text{kg}$) did exceed the standard, warranting advice to eat no more than one meal of white perch per month.

The TMDL is a written plan and analysis established to ensure that a waterbody will attain and maintain water quality standards. The TMDL is a scientifically-based strategy which considers current and foreseeable conditions, the best available data, and accounts for uncertainty with the inclusion of a "margin of safety" value. Conditions, available data and the understanding of the natural processes can change more than anticipated by the margin of safety. The state may always refine or otherwise modify the TMDL for re-submittal to EPA for approval. The unassessed waters protocol, a method of conducting biological assessments of Pennsylvania's waters, was developed in 1996 and began implementation in 1997. PADEP's goal is a statewide assessment of surface waters in Pennsylvania. After completion of the initial assessments, the long-range goal is to re-assess all waters on a five-year cycle. Therefore, while the TMDL should not be modified at the expense of achieving water quality standards expeditiously, the TMDL may be modified when warranted.

III. Discussion of Regulatory Conditions

EPA finds that the TMDL for PCBs for Levittown Lake meets the regulatory requirements of the CWA. Our approval is outlined according to the regulatory requirements listed below.

1) The TMDLs are designed to implement the applicable water quality standards.

A TMDL is required to assure that appropriate water quality standards are attained and maintained. Water Quality Standards include numeric criteria, narrative criteria and designated uses. Because consumption advisories are in place the use designations are not being met in the Lake. In addition, translation of fish tissue data to water column concentrations can show if the numeric standards for PCBs are being met. Pennsylvania's calculations estimate that water column concentrations exceed numeric criteria for PCBs.

The specific goal of a TMDL is to outline a plan to achieve the water quality standard in a particular water body. For Levittown Lake, the goal is for the concentration of PCB in the water column to be equal to or less than the State's water quality criteria. The criterion for PCBs, found in the "Water Quality Toxics Management Strategy – Statement of Policy" (Chapter 16 of PADEP's rules and regulations) is 0.00004 ug/L (micrograms per liter, equivalent to parts per billion – ppb). PCBs are probable human carcinogens, and PADEP developed this criterion to protect against excess cancer risk. PADEP's water quality toxics management program controls carcinogens to an overall risk level of one excess case of cancer in a population of one million.

To equate fish tissue data with this water quality criterion, PADEP calculated an estimated water column concentration using a bioconcentration factor (BCF) taken from an EPA criteria development document (EPA 440/5-80-027, October, 1980). PADEP used the BCF methodology instead of a Bioaccumulation Factor (BAF) because Pennsylvania does not have statewide BAF and the BCF method was used to derive the water quality standard for PCBs, so this method is acceptable. The calculation involves dividing the average fish tissue concentration by the bioconcentration factor to obtain an estimated water column concentration. The equation is:

$$TC/BCF = WC \times 1000$$

Where:

TC = Tissue concentration in mg/kg (equivalent to mg/L)

BCF = EPA Bioconcentration Factor in 1/kg, equal to 31,200 for PCB

WC = Water Column Concentration (estimated) in mg/L

Multiply by 1000 to obtain ug/L

$$0.329^{\text{mg/kg}} / 31,200 = 0.00001054^{\text{mg/L}}$$

$$0.00001054^{\text{mg/L}} \times 1000 = 0.01054^{\text{ug/L}}$$

Average fish tissue concentration is the mean of all samples shown in the table below. The data are included as Appendix A. PADEP uses average concentration for two reasons. First, fish tissue samples are composites; a sample represents the average concentration among three to five individuals, not an exact value. Second, use of an average value considers the natural variation in tissue burden found in wild fish populations. PADEP uses the EPA bioconcentration factor because PADEP has no bioaccumulation factor available for statewide use. The use of BCFs is consistent with the provisions of PADEP's water quality toxics management strategy.

Fish Tissue Data Used to calculate the TMDL for the Levittown Lake

Parameter	Fish Species	Number of Data Sets	Range of Years	Years
PCB	NA	3	1989 - 1995	1989, 1994, 1995
Chlordane	NA	4	1986 - 1995	1986, 1989, 1994, 1995

The average PCB concentration in white perch from Levittown Lake is 0.329 mg/kg (ppm). The estimated water column concentration of PCB is 0.01054 ug/L (ppb). This estimated concentration exceeds the applicable water quality criterion (0.00004 ug/L). This water column concentration is most likely a conservative estimate. Back calculations from tissue concentration to water column concentration using average values tend to be higher than the actual concentration. It is standard practice to assign a value of one half of the detection limit to tissue data reported at below detection. The actual value may be anywhere between the detection limit and zero. While the actual water column concentration is unknown, it is likely to be lower than the calculated estimate.

2) The TMDLs include a total allowable load as well as individual waste load allocations and load allocations.

In order to determine the allocations for each pollutant, significant sources must be identified. Potential point sources include any direct discharge of PCB to the surface water such as a discharge permitted under the National Pollutant Discharge Elimination System (NPDES). Potential nonpoint sources include soil erosion and groundwater migration from uncontrolled waste sites and sediment release.

A) Wasteload Allocations

PADEP conducted a source assessment using various methods. The EPA Permit Compliance System (PCS) database was searched for any major discharge permits containing PCB as an effluent limitation, but no known point sources were identified from this search. Therefore EPA agrees with the zero WLA was assigned in Levittown Lake.

TMDL Summary

The TMDL for PCB at Levittown Lake is summarized as follows. All values are expressed in milligram (mg). The MOS has been accounted for by holding 10% of the TMDL in reserve. The LA value below consists of contributions from background conditions and potential non-point load from groundwater migration.

TMDL Summary

TMDL	=	WLA	+	LA	+	MOS
0.0108591 mg²	=	0	+	0.0097732 mg	+	0.00108592 mg

Since lake volume is relatively constant, all that's needed to compute the maximum allowable load is lake volume, the current (estimated) water column concentration of PCB, and the target PCB concentration (water quality criterion). Computation will yield the maximum amount of PCB allowable in the lake while still meeting the water quality criterion. From this follows the percent reduction required to meet the target concentration.

Lake volume:

Volume = surface area x mean depth

Volume (Levittown Lake) = 22 acres x 10 feet

Volume (Levittown Lake) = 220 acre/feet

$m^3 = \text{acre/feet} \times 1234.0$

$220 \text{ acre/feet} = 271,480 m^3$

$m^3 = \text{liters (L)} \times 1000$

Volume (Levittown Lake) = 271,480,000 L

Estimated Total PCB in the Water Column:

Estimated WC concentration (PCB) x Lake Volume = Total PCB in WC

$0.01054 \text{ ug/L} \times 271,480,000 \text{ L} = \underline{2,861,399.2 \text{ ug}}$

$= \underline{2.86 \text{ mg}^3}$, Estimated total PCB in water column (Levittown Lake)

² The final TMDL submitted by PADEP contained a typo that was carried through the calculation of the TMDL. The correct conversion is actually, $10,859.2 \text{ ug} = 0.0108592 \text{ mg}$. This has been corrected in this document.

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Achievement of a TMDL should ensure achievement of the fishable and swimmable standard. To account for uncertainties that may be associated with TMDL calculations, PADEP proposes to hold 10% of the TMDL in reserve. When we apply this 10% margin of safety (MOS), the LA equals only 90% of the calculated TMDL.

$$LA = [\text{WQ criterion (PCB)} \times \text{Lake Volume}] - 10\% \text{ margin of safety (MOS)}$$

$$[0.00004 \text{ ug/L} \times 271,480,000 \text{ L}] = 10,859.2 \text{ ug} = \underline{0.0108592 \text{ mg}}$$

$$\text{MOS} = 0.1 \times 0.0108592 \text{ mg} = \underline{0.00108592 \text{ mg}}$$

$$\underline{LA = [0.0108592 \text{ mg}] - 0.00108592 \text{ mg} = 0.0097732 \text{ mg}}$$

Percent Reduction

The goal of this TMDL is to protect public health by meeting the water quality criterion for PCB. In order to achieve this, we must reduce the PCB concentration in Levittown Lake from the estimated current level to the criterion level. To put this task in perspective, we report the percent reduction in PCB concentration required to achieve the water quality criterion:

$$\text{Percent Reduction} = 1 - (\text{TMDL goal} / \text{existing concentration}) \times 100$$

$$\text{Percent Reduction} = 1 - (0.00004 \text{ ug/L} / 0.01054 \text{ ug/L}) \times 100 = 99.6\%$$

$$\underline{\text{Required Percent Reduction in PCB Water Column Concentration} = 99.6\%}$$

Soil Erosion from Uncontrolled Sites

The following methods were used to identify potential point and non-point sources of PCB to Levittown Lake. To identify potential point sources, the EPA Permit Compliance System (PCS) database was searched for possible discharge permits (point sources) containing an effluent limitation for PCB. To identify potential non-point sources of PCB related to uncontrolled waste sites, a search for sites within the Levittown Lake drainage area was conducted through the use of EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), a search of records within EPA's remedial and removal programs, and telephone interviews with representatives of PADEP's hazardous sites cleanup program. EPA's CERCLIS database contains information related to every site that has been investigated or cleaned up under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as Superfund.

The search methods discussed above revealed that a former landfill on the adjacent property to the south/southeast could serve as an historic source of PCB via soil erosion into the lake.

A portion of the property near the lake was previously used as a landfill and referred to as Levittown Dump or St. Michael's Landfill. Both the lake (20 acres) and the former landfill (25 acres) were used previously as a sand/gravel quarry. The lake formed in the 1950s by flooding the quarry. Most reports indicate the landfill accepted municipal and industrial wastes from approximately 1960 until approximately 1975. However, wastes are alleged to have been dumped at the site until as late as 1980. Wastes caught fire at the landfill in 1968 and in 1980.

In 1980, EPA identified the former landfill as a potential hazardous waste site and conducted a preliminary assessment that same year. The site was assigned identification numbers PAD9805008683 and PA-282. EPA later conducted sampling and analysis of groundwater, surface water, and sediment during a 1982 site inspection and another sampling effort in 1986. In 1988, the former landfill was covered with an unknown thickness and unknown type of soil, although one memorandum prepared by PADEP indicates that three to four feet of sandy silt and one to four feet of top soil were placed over the landfill (Environmental Resources Management, 1988). A playing field was then constructed.

EPA collected one sediment sample from the lake in 1982 and four sediment samples in 1986. PCB was not detected in the one 1982 sediment sample collected from the lake, and it is unclear whether the 1986 samples were analyzed for PCB. Other contaminants were detected in Levittown Lake sediment, suggesting that erosion of contaminated materials may have occurred historically (NUS Corporation, Superfund Division, 1986). These contaminants include chlordane (65 µg/kg), lead (up to 470 mg/kg), polycyclic aromatic hydrocarbons (up to 270 µg/kg), and 4-methylphenol (up to 580 µg/kg). Also, a surface water sample collected from the lake contained copper (16 µg/L) and zinc (55 µg/L) (NUS Corporation, Superfund Division, 1986).

During the 1982 site inspection, eroded drainage ditches were observed along the landfill near the lake and were believed to carry surface runoff from the landfill area to the lake (Ecology and Environment, Inc. 1982). Although there are no PCB data for the soil that may have eroded, the former landfill represents a likely historic source of soil erosion that may have been contaminated with PCB based on the presence of various industrial wastes at the landfill. Although no design or construction drawings are available for the soil cover that was placed over the site, it is possible that the cover has eliminated this likely historic source (Ecology and Environment, Inc. 1982).

Sediment Release

The final source of PCB contamination is that of lake sediment release. Although PCB may have entered the lake from the uncontrolled site, PCB was not detected in the lake sediments in the 1982 and 1986 sampling events. As a result, PCB release from sediment is not considered in this analysis.

Groundwater from Uncontrolled Sites

In 1982, EPA collected groundwater samples from wells at the former landfill. Analytical results showed the presence of chromium (up to 67 µg/L), arsenic (39 µg/L), iron (up to 22,000 µg/L),

chloroethane (44 µg/L), and manganese (3,500 µg/L) (Ecology and Environment, Inc. 1982). Although PCB was not detected, there is a possibility that PCB was present in groundwater samples at concentrations below a laboratory detection limit, which is generally four magnitudes higher than the water quality criterion of (0.00004 µg/L) (Ecology and Environment, Inc. 1982). Therefore, non-detect results are inconclusive as to the possible presence of PCB at a concentration that could affect water quality (Ecology and Environment, Inc. 1982).

In 1998, Environmental Resources Management, Inc. conducted a limited groundwater investigation on behalf of the property owner, during which five monitoring wells were installed generally around the limits of the former landfill (Environmental Resources Management. 1988). The study concluded that groundwater generally flows to the south/southeast and away from Levittown Lake. Although the samples were not analyzed for PCB, other results documented the presence of benzene, toluene, bis(2-ethylhexyl)phthalate, naphthalene, selenium, arsenic, beryllium, cadmium, chromium, lead, thallium, and vanadium at concentrations exceeding Pennsylvania's Act 2 medium-specific standards. Monitoring results indicate a possible upgradient source of volatile organic compounds (VOCs). Although the study documents the presence of several contaminants at elevated concentrations in groundwater, there was insufficient chemical data (no analytical data for PCB) to determine if PCB are present in the groundwater or have been transported to Levittown Lake via groundwater. There was incomplete hydrogeologic data (only five wells were evaluated), with the closest well located 350 feet southwest of the lake, and only May/June 1998 groundwater elevation data were available to be evaluated - (Environmental Resources Management. 1988).

B) Load Allocations

Considering the above information only, PCB-contaminated groundwater from St. Michael's Landfill could not be ruled out, but PADEP did uncover additional information that casts doubt on groundwater infiltration from St. Michael's Landfill as the source of PCB in Levittown Lake. Although PCB was not detected, there is a possibility that PCB was present in groundwater samples at concentrations below a laboratory detection limit, which is generally four magnitudes higher than the water quality criterion of (0.00004 µg/L). Therefore, non-detect results are inconclusive as to the possible presence of PCB at a concentration that could affect water quality.

After analyzing the available evidence, PADEP concludes that the most likely route of entry of PCBs into Levittown Lake was through the storm sewers or by overland transport of contaminated soil particles via runoff and erosion. PADEP also concludes that it is unlikely that PCBs are entering the lake today. Although a 1982 report noted the presence of erosion gullies connecting the lake with the landfill, this condition has been corrected. Surface runoff should now be contained within the landfill, barring catastrophic flooding.

The storm sewers still discharge directly into the lake. They drain approximately $\frac{3}{4}$ of a square mile of the surrounding developed area, excluding the landfill. All surface runoff, along with any contaminants on the surface of lawns, streets, roofs and parking lots within this area could potentially enter Levittown Lake. PCBs are not usually found in residential neighborhoods, but at some time in the past, small amounts of the material could conceivably have ended up within

the area drained by these sewers. There is also the possibility of intentional dumping. Since the manufacture and use of PCB has been illegal for over 20 years, it is unlikely that this material would exist today in a residential/commercial area to serve as a continuing source of surface runoff contamination. Although we may never know the source of the PCB contamination at this site, we are reasonably certain, based on currently available information, that there is no continuing discharge of PCBs into Levittown Lake, either from groundwater infiltration or surface runoff.

Historic sources of PCBs have been identified from St. Michael's Landfill to Levittown Lake. However, although PCBs could be present in the groundwater near the site, limited data exist to verify or even quantify a potential load. Historically, significant amounts of PCB may have entered the lake through soil erosion during the operation of the former landfill. However, based on the ban on PCB use, the covering of the former landfill, and the primarily residential land use within the drainage area, DEP does not believe that surface runoff represents a significant source of PCB entering the lake today and EPA concurs. EPA finds this allocation acceptable.

3) The TMDLs consider the impacts of background pollutant contributions.

An important component of determining a TMDL is considering the background pollutant contributions which may be present in a waterbody

Development of a TMDL also includes consideration of such factors as background pollutant contributions. PCB is a man-made product and no natural sources of PCB load exists in the environment. Nonetheless, due to the pervasive use of PCBs prior to their ban in the late 1970s and their slow degradation rates, PCBs are now widespread in the environment. This pervasive distribution of PCBs in air, soil, and water effectively creates a background load of PCB in all water bodies. Both atmospheric deposition and soil erosion contribute to background concentrations of PCB in water bodies.

Background concentrations of PCB in the Levittown Lake vicinity have not yet been scientifically established. There are no natural inlets to the Lake, and therefore the only potential background contribution is atmospheric deposition. PADEP assumed a background of zero for this system. PADEP's assumption for the use of this value is supported by the fact that for this lake system, no data that could be used as background was located or identified. EPA agrees that no available data was identified for Levittown Lake. Therefore, EPA believes that this approach satisfies the requirements to consider background.

4) The TMDLs consider critical environmental conditions.

EPA regulations at 40 CFR 130.7(c)(1) require TMDLs to take into account critical conditions for streamflow, loading, and water quality parameters. The intent of this requirement is to ensure that the water quality Levittown Lake is protected during times when it is most vulnerable. The TMDL is represented as a concentration level that is protective against toxic human health effect at all times. Implicitly, the TMDL accounts for seasonal variations since it is protective throughout the year. This situation does not necessarily conform to the concept of

controlling for critical conditions for several reasons. First, the notion of “critical conditions” does not arise in the traditional sense for this TMDL. The allowable concentrations of PCB are based on human fish consumption over a long time period, which averages out any critical events. Additionally, the TMDL is founded upon human health standards that account for critical sub-populations that might be more susceptible to toxic risk. Second, the TMDL is protective at all times, which implies that any “critical conditions” within that time frame are considered. Finally, the TMDL levels established to be protective of human health are more conservative than standards established to protect environmental resources, implying that critical conditions for environmental resources are also addressed by the previous logic that applied to human health. EPA believes that this approach satisfies the requirements to consider critical environmental conditions.

5) The TMDLs consider seasonal environmental variations.

Seasonal variations involve changes in stream flow as a result of hydrologic and climatological patterns. In the continental United States, seasonally high flow normally occurs during the colder period of winter and in early spring from snow melt and spring rains, while seasonally low flow typically occurs during the warmer summer and early fall drought periods⁶. Consistent with the discussion regarding critical conditions, expressing the load allocations of an annual basis using field-derived or accepted loading coefficients will account for seasonal variations. The TMDL is represented as a concentration level that is protective against toxic human health effect at all times. Implicitly, the TMDL accounts for seasonal variations since it is protective throughout the year. EPA believes that this approach satisfies the requirements to consider seasonal environmental variations.

6) The TMDLs include a margin of safety

Achievement of a TMDL should ensure achievement of the fishable and swimmable standard. To account for uncertainties that may be associated with TMDL calculations, PADEP proposes to hold 10% of the TMDL in reserve as an explicit margin of safety (MOS). When we apply this 10% MOS, the LA equals only 90% of the calculated TMDL. EPA concurs with this approach to considering a Margin of Safety.

7) There is reasonable assurance that the TMDLs can be met.

Both historic and existing sources of PCB to Levittown Lake have been identified. Although PCB could be present in groundwater near the site, limited data are available to verify or quantify this potential load. Historically, significant amounts of PCB may have entered the lake through soil erosion during the operation of the former landfill. However, based on the ban on PCB use, the covering of the former landfill, and the primarily residential land use within the drainage area, PADEP does not believe that surface runoff represents a significant source of PCB entering the lake today.

⁶ Section 2.3.3 of the Technical Guidance Manual for Developing Total Maximum Daily Loads, Book 2, Part 1 (EPA 823-B-97-002, 1997).

Acknowledging the limited data available to quantify certain existing sources of PCB to Levittown Lake, the concentrations of PCB in the water column and fish tissue are expected to decline through natural attenuation. Contaminated sediment can gradually be covered by newer, uncontaminated material, and chemical breakdown is likely to occur over an extended period. Natural attenuation involves less habitat disturbance and destruction than the active removal of potentially contaminated sediments. Mechanical or vacuum dredging of a relatively small, closed system such as Levittown Lake could result in the destruction of many fish and invertebrates, and seriously damage the lake habitat for those species remaining. Also, active removal would re-suspend contaminated material and PCB would then become more available for uptake into the water column.

8) The TMDLs has been subject to public participation

Notice of the draft TMDL for Levittown Lake was published in the Bucks County Courier Times, a newspaper of general circulation, on October 2, 2000 and in the PA Bulletin on September 30, 2000 with a 60-day public comment period. A public meeting was held on November 15, 2000 at PADEP's Southeast Regional Office, located in Lee Park, Suite 6010, Conshohocken, PA 19428, to discuss and accept comments on the proposed TMDL. The public comment period closed on November 29, 2000. Notice of final TMDL approval will be posted on PADEP's website.

Pennsylvania provided a Response to Comments document along with the final TMDL. We believe that this documents responds to all comments provided during the public comment period, however, the actual comments letters were not provided in the final submittal.

Monitoring

Within resources, PADEP will review the basis for the zero background assumption to determine if it continues to be valid. If the review determines that the zero background assumption is no longer valid, PADEP will assess available and practical options for conducting background monitoring for PCBs. Factors to be considered in this assessment include. The ongoing water quality monitoring program and priorities, fish tissue sampling, sediment sampling, water column sampling, and the availability of EPA approved methods. PADEP will consider the results of this assessment in establishing a plan for the conduct of additional PCB data collection efforts. Any new data will be assessed for possible revision to the PCB TMDL.

Pennsylvania will continue to monitor white perch in Levittown Lake for elevated tissue concentrations of PCB. PADEP will collect samples once every five years. PADEP will use the data to evaluate the possible threat to public health and to determine progress toward attaining the TMDL. PADEP will leave consumption advisories in place until the water quality standard is achieved.

References

Ecology and Environment, Inc. 1982. Site Inspection of Levittown Dump, EPA Contract # 68-01-6056.

Environmental Resources Management. 1988. Report of Findings of the Supplemental Ground Water and Soil Gas Investigation of the Former Levittown Landfill

NUS Corporation, Superfund Division, 1986. A Field Trip Report for Levittown Dump, EPA Contract # 68-01-6699.